CLAIMS

1. A method of transcoding between a first compression codec and a second compression codec, said first and second codecs being of pulse type and using multipulse dictionaries in which each pulse has a position marked by an associated index,
which method is characterized in that it includes the following steps:

a) where appropriate, adapting coding parameters between said first and second codecs;

b) obtaining from the first codec a selected number (N_e) of pulse positions and respective position indices (e_i) associated therewith;

c) for each current pulse position of given index, forming a group of pulse positions including at least the current pulse position and the pulse positions with associated indices immediately below and immediately above the given index;

d) selecting as a function of pulse positions (T_j) accepted by the second codec at least some of the pulse positions in an ensemble (P_s) constituted by a union of said groups formed in step c); and

e) sending the selected pulse positions to the second codec for coding/decoding from the positions sent;

said selection step d) then involving a number of pulse positions less than the total number of pulse positions in the dictionary of the second codec.

2. A method according to claim 1, wherein the first codec (E) uses a first number of pulses in a first coding format and characterized in that said selected number (N_e) in step b) corresponds to said first number of pulse positions.

3. A method according to claim 2, wherein:

· the first codec (E) uses a first number (N_e) of pulse positions in a first coding format; and

· the second codec (E) uses a second number (N_s) of pulse positions in a second coding format;
and characterized in that it further includes a step of discriminating between the following situations:

· the first number (N_e) is greater than or equal to the second number (N_s); and

· the first number (N_e) is less than the second number (N_s).

4. A method according to claim 3, wherein the first number (N_e) is greater than or equal to the second number (N_s) ($N_e \geq N_s$) and characterized in that each group formed in step c) includes right-hand neighbor pulse positions (v^i_d) and left-hand neighbor pulse positions (v^i_g) of said current pulse position of given index and the respective numbers of left-hand and right-hand neighbor pulse positions are selected as a function of a complexity/transcoding quality trade-off.

5. A method according to claim 4, characterized in that there is constructed in step d) a subdirectory of combinations of pulse positions resulting from intersections (S_j) of:

· an ensemble (P_s) constituted by a union of said groups formed in step c); and

· pulse positions (T_j) accepted by the second codec,
so that said subdirectory has a size less than the number of pulse position (T_j) combinations accepted by the second codec.

6. A method according to claim 5, characterized in that after step e) said subdirectory is searched for an optimum set of positions including said second number (N_s) of positions at the level of the second coder (S).

7. A method according to claim 6, characterized in that the step of searching for the optimum set of positions is

effected by means of a focused search to accelerate the exploration of said subdirectory.

8. A method according to any one of the preceding claims, wherein said first codec is adapted to deliver a succession of coded frames and characterized in that the respective numbers of pulse positions in the groups formed in step c) are selected successively from one frame to the other.

9. A method according to claim 3, wherein the first number (N_e) is less than the second number (N_s) ($N_e<N_s$) and characterized in that a further test is effected to determine if the pulse positions provided in the second number (N_s) of pulse positions are included in the pulse positions of the groups formed in step c) and,
in the event of a negative result of said test, the number of pulse positions in the groups formed in step c) is increased.

10. A method according to claim 3, characterized in that it further discriminates the situation in which the second number N_s is between the first number N_e and twice the first number N_e ($N_e<N_s<2N_e$) and if so:
c1) the N_e pulse positions are selected from the outset; and
c2) there is further selected a complementary number of pulse positions $N_s - N_e$ defined in the immediate neighborhood of the pulse positions selected in step c1).

11. A method according to any one of the preceding claims, wherein said first codec operates with a given first sampling frequency and from a given first subframe duration and characterized in that said coding parameters for which said adaptation is carried out in step a) include a subframe duration and a sampling frequency and said second codec operates with a second sampling

frequency and a second subframe duration and characterized in that the following four situations are distinguished in step a):

· the first and second durations are equal and the first and second frequencies are equal;

· the first and second durations are equal and the first and second frequencies are different;

· the first and second durations are different and the first and second frequencies are equal; and

· the first and second durations are different and the first and second frequencies are different.

12. A method according to claim 11, wherein the first and second durations are equal and the first and second sampling frequencies are different and characterized in that it includes steps of:

a1) direct time scale quantization from the first frequency to the second frequency; and

a2) determination as a function of said quantization of each pulse position in a subframe with the second coding format characterized by the second sampling frequency from a pulse position in a subframe with the first coding format characterized by the first sampling frequency.

13. A method according to claim 12, characterized in that the quantization step a1) is effected by calculation and/or tabulation on the basis of a function which at a pulse position in a subframe with the first format (p_e) establishes the correspondence of a pulse position in a subframe with the second format (p_s), said function substantially taking the form of a linear combination involving a multiplier coefficient corresponding to the ratio of the second sampling frequency to the first sampling frequency.

14. A method according to claim 13, characterized in that to pass conversely a pulse position in a subframe with

the second format (p_s) to a pulse position in a subframe with the first format (p_e) there is applied an inverse function to said linear combination applied to a pulse position in a subframe with the second format (p_s).

15. A method according to claim 11, wherein the first and second durations are equal and the first and second sampling frequencies are different and characterized in that it includes the steps of:

a'1) oversampling a subframe with the first coding format characterized by the first sampling frequency at a frequency equal to the lowest common multiple of the first and second sampling frequencies; and

a'2) applying to the oversampled subframe low-pass filtering followed by undersampling to obtain a sampling frequency corresponding to the second sampling frequency.

16. A method according to claim 15, characterized in that the method continues by obtaining a number of positions by means of a thresholding method, where appropriate a variable number of positions.

17. A method according to claim 12, characterized in that it further includes a step of establishing the correspondence for each position (p_e) of a pulse of a subframe with the first coding format characterized by the first sampling frequency of a group of pulse positions (p_s) in a subframe with the second coding format characterized by the second sampling frequency, each group including a number of positions that is a function of the ratio (F_s/F_e) between the second sampling frequency and the first sampling frequency.

18. A method according to claim 11, wherein the first and second subframe durations are different and characterized in that it includes the steps of:

a20) defining an origin (O) common to the subframes of the first and second formats;

a21) dividing successive subframes of the first coding format characterized by a first subframe duration to form pseudosubframes of duration corresponding to the subframe duration of the second format;

a22) updating said common origin; and

a23) determining the correspondence between the pulse positions in the pseudosubframes and in the subframes with the second format.

19. A method according to claim 18, characterized in that it also discriminates the follow situations:

· the first and second durations are fixed in time; and

· the first and second durations vary in time.

20. A method according to claim 19, wherein the first and second durations are fixed in time and characterized in that the position in time of said common origin is periodically updated whenever boundaries of respective subframes of first and second duration are aligned in time.

21. A method according to claim 19, wherein the first and second durations vary in time and characterized in that:

a221) respective summations of the durations of subframes with the first format and the durations of subframes with the second format are effected successively;

a222) equality of the two summations is detected, defining a time of updating said common origin; and

a223) said two summations are reset, after said equality is detected, for future detection of a next common origin.

22. A software product adapted to be stored in a memory of a processor unit, in particular a computer or a mobile

terminal, or in a removable memory medium adapted to cooperate with a reader of the processor unit, characterized in that it includes instructions for implementing the transcoding method according to any one of the preceding claims.

23. A system for transcoding between a first compression codec and a second compression codec, said first and second codecs being of the pulse type and using multipulse dictionaries in which each pulse has a position marked by an associated index, said system being characterized in that it includes a memory adapted to store instructions of a software product according to claim 22.